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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/611,879	07/07/2000	Timothy M. Schmidl	TI-30718	7397

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EXAMINER

HO, CHUONG T

ART UNIT	PAPER NUMBER
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2664

DATE MAILED: 04/07/2004

5

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/611,879

Applicant(s)

SCHMIDL ET AL.

Examiner

Chuong Ho

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1, 2 and 8-22 is/are rejected.
- 7) ☐ Claim(s) 3-7 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>3.4</u> . | 6) <input type="checkbox"/> Other: ____ |

1. Claims 1-22 are pending.

DETAILED ACTION

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-2, 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Kou (U.S. Patent No. 5,303,234).

In the claim 1, Kou discloses the central station (first wireless communication device) monitors (determining) the defined monislots to detect the burst transmission, and assign as many timeslots as required if more than one burst transmission is detected within a timeslot interval. A slot assignment signal is sent from the central station to the user station containing a negative acknowledgement (NAK) of the transmission packet. The user station (wireless communication devices) from which the packet was transmitted is responsive to the negative acknowledgement (NAK) to select one of the assigned timeslots and retransmit to the central station a copy of the packet on the selected assigned timeslot (see abstract); comprising:

The first device (central station) attempting to perform a plurality of communication with the further devices via a wireless communication link (see figure 1) during respective transmission time slots of a transmission period that have assigned to the respective

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communication (see abstract, figure 4, col. 1, lines 27-30, lines 52-60, col. 2, lines 58-60, col. 3, lines 23-30, col. 4, lines 57-67, col. 5, lines 27-30, col. 6, lines 9-23);

The first device (central station) determining which of communications has been successfully (ACK) (see figure 3) performed and which of communications has not been successfully (NAK) (see figure 3) performed (see abstract, figure 4, figure 8, col. 1, lines 27-30, lines 52-60, col. 2, lines 58-60, col. 3, lines 23-30, col. 4, lines 57-67, col. 5, lines 27-30, col. 6, lines 9-23);

Responsive to determining step, the first device (central station) assigning to respective retransmission time slots of a retransmission period a plurality of further communications between the first device (central station) and the further device (user stations) (see abstract, figure 4, figure 8, col. 1, lines 27-30, lines 52-60, col. 2, lines 58-60, col. 3, lines 23-30, col. 4, lines 57-67, col. 5, lines 27-30, col. 6, lines 9-23);

For each of the further communications, one of the first device (central station) and the further devices (user stations) transmitting the further communication via the wireless communication link (see figure 1) during the retransmission time slot assigned to the further communication (see abstract, figure 4, figure 8, col. 1, lines 27-30, lines 52-60, col. 2, lines 58-60, col. 3, lines 23-30, col. 4, lines 57-67, col. 5, lines 27-30, col. 6, lines 9-23).

4. In the claim 2, Kou discloses communications each include a transfer of a packet of information between the first device (central station) and one of the further devices (user stations) (see abstract, figure 4, figure 8, col. 1, lines 27-30, lines 52-60, col. 2, lines 58-60, col. 3, lines 23-30, col. 4, lines 57-67, col. 5, lines 27-30, col. 6, lines 9-23).

5. In the claim 17, Kou discloses the central station (first wireless communication device) monitors (determining) the defined monislots to detect the burst transmission, and assign as many timeslots as required if more than one burst transmission is detected within a timeslot interval. A slot assignment signal is sent from the central station to the user station containing a negative acknowledgement (NAK) of the transmission packet. The user station (wireless communication devices) from which the packet was transmitted is responsive to the negative acknowledgement (NAK) to select one of the assigned timeslots and retransmit to the central station a copy of the packet on the selected assigned timeslot (see abstract); comprising:

The first device (central station) attempting to perform a plurality of communication with the further devices via a wireless communication link (see figure 1) during respective transmission time slots of a transmission period that have assigned to the respective communication (see abstract, figure 4, col. 1, lines 27-30, lines 52-60, col. 2, lines 58-60, col. 3, lines 23-30, col. 4, lines 57-67, col. 5, lines 27-30, col. 6, lines 9-23);

The first device (central station) determining which of communications has been successfully (ACK) (see figure 3) performed and which of communications has not been successfully (NAK) (see figure 3) performed (see abstract, figure 4, figure 8, col. 1, lines 27-30, lines 52-60, col. 2, lines 58-60, col. 3, lines 23-30, col. 4, lines 57-67, col. 5, lines 27-30, col. 6, lines 9-23);

Responsive to determining step, the first device (central station) assigning to respective retransmission time slots of a retransmission period a plurality of further communications between the first device (central station) and the further device (user

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stations) (see abstract, figure 4, figure 8, col. 1, lines 27-30, lines 52-60, col. 2, lines 58-60, col. 3, lines 23-30, col. 4, lines 57-67, col. 5, lines 27-30, col. 6, lines 9-23);

For each of the further communications, one of the first device (central station) and the further devices (user stations) transmitting the further communication via the wireless communication link (see figure 1) during the retransmission time slot assigned to the further communication (see abstract, figure 4, figure 8, col. 1, lines 27-30, lines 52-60, col. 2, lines 58-60, col. 3, lines 23-30, col. 4, lines 57-67, col. 5, lines 27-30, col. 6, lines 9-23).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kou (U.S. Patent No. 5,303,234) in view of Haartsen (U.S. Patent No. 6,026,297).

In the claim 13, Kou discloses the central station (first wireless communication device) monitors (determining) the defined monislots to detect the burst transmission, and assign as many timeslots as required if more than one burst transmission is detected within a timeslot interval. A slot assignment signal is sent from the central station to the user station containing a negative acknowledgement (NAK) of the transmission packet. The user station (wireless communication devices) from which the packet was transmitted is responsive to the negative acknowledgement (NAK) to select

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one of the assigned timeslots and retransmit to the central station a copy of the packet on the selected assigned timeslot (see abstract); comprising:

The first device (central station) attempting to perform a plurality of communication with the further devices via a wireless communication link (see figure 1) during respective transmission time slots of a transmission period that have assigned to the respective communication (see abstract, figure 4, col. 1, lines 27-30, lines 52-60, col. 2, lines 58-60, col. 3, lines 23-30, col. 4, lines 57-67, col. 5, lines 27-30, col. 6, lines 9-23);

The first device (central station) determining which of communications has been successfully (ACK) (see figure 3) performed and which of communications has not been successfully (NAK) (see figure 3) performed (see abstract, figure 4, figure 8, col. 1, lines 27-30, lines 52-60, col. 2, lines 58-60, col. 3, lines 23-30, col. 4, lines 57-67, col. 5, lines 27-30, col. 6, lines 9-23);

Responsive to determining step, the first device (central station) assigning to respective retransmission time slots of a retransmission period a plurality of further communications between the first device (central station) and the further device (user stations) (see abstract, figure 4, figure 8, col. 1, lines 27-30, lines 52-60, col. 2, lines 58-60, col. 3, lines 23-30, col. 4, lines 57-67, col. 5, lines 27-30, col. 6, lines 9-23);

For each of the further communications, one of the first device (central station) and the further devices (user stations) transmitting the further communication via the wireless communication link (see figure 1) during the retransmission time slot assigned to the further communication (see abstract, figure 4, figure 8, col. 1, lines 27-30, lines 52-60,

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col. 2, lines 58-60, col. 3, lines 23-30, col. 4, lines 57-67, col. 5, lines 27-30, col. 6, lines 9-23).

However, Kou is silent to disclosing the first device detecting a change in membership of group of further devices.

Haartsen discloses the first device (the master) detecting a change in membership of group of further devices (slaves) (see col. 4, lines 41-48).

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Kou with the teaching of Haartsen to detect a change in membership of group of further devices (join or leave of slaves) in order to assign the slaves the retransmission slots (is used to send from the slaves to the master). Therefore, the combined system would have been the first device (the master) to broadcast information to slaves (join or leave the piconet).

8. In the claim 14, Kou discloses the first device (central station) and the further devices (user stations) maintaining information indicative of the length of the relationship period, the first device (central station) updating length information in response (ACK/NAK) to detecting step, and the further device (user stations) updating length information in response to transmitting step (see col. 4, lines 56-65).

9. Claims 15-16, are rejected under 35 U.S.C. 103(a) as being unpatentable over the combined system (Kou-Haartsen) in view of Papadopoulos et al. (U.S. Patent No. 5,602,836).

In the claim 15, 16, the combined system (Kou-Haartsen) discloses the limitations of claim 13.

However, the combined system is silent to disclosing change in membership of group of further devices is increase in membership, and change in length of the retransmission period is a decrease in length.

Papadopoulos et al. discloses the slots allocated to particular active users in the given frame are shifted by at least one slot position if the same users are allocated slots in the subsequent frame (see abstract); comprising:

to disclosing change in membership of group of further devices is increase in membership, and change in length of the retransmission period is a decrease in length (see figure 4, see abstract, the slots allocated to particular active users in the given frame are shifted by at least one slot position if the same users are allocated slots in the subsequent frame, see col. 5, lines 23-25, col. 4, lines 22-32).

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined system (Kou-Haartsen) with the teaching of Papadopoulos to decrease in length of the transmission period if the member of group of further devices is changed in order to provide high capacity, high quality and low decay communications, particular for wireless communication.

10. Claims 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kou (U.S. Patent No. 5,303,234) in view of Raychaudhuri et al. (U.S. Patent No. 5,684,791).

In the claim 8, Kou discloses the limitations of claim 1 above.

However, Kou is silent to disclosing the first device is master device (base station) and the further devices are slave devices (user devices), assigning step

including the first device assigning to a first retransmission time slot a first communication from the first device to one of the further devices and assigning to a second retransmission time slot adjacent the first retransmission time slot a second communication from the first device to one of the further devices.

Raychaudhuri et al. discloses the first device is master device (base station) and the further devices are slave devices (user devices), assigning step including the first device assigning to a first retransmission time slot a first communication from the first device to one of the further devices and assigning to a second retransmission time slot adjacent the first retransmission time slot a second communication from the first device to one of the further devices (see col. 8, lines 28-32).

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Kou with the teaching of Raychauhury et al. to assign to a first retransmission time slot a first communication from the first device to one of the further devices and assigning to a second retransmission time slot adjacent the first retransmission time slot a second communication from the first device to one of the further device in order to recover for lost data packets.

11. In the claim 9, Raychauhury et al. discloses the first and the second communications are different from one another (see figure 4, see abstract, the slots allocated to particular active users in the given frame are shifted by at least one slot position if the same users are allocated slots in the subsequent frame, (see col. 8, lines 28-32).

12. In the claim 10, Raychauhury et al. discloses the first and second communications are both communications from the first device to the same one of the further devices (see col. 8, lines 28-32).

13. In the claim 11, Raychauhury et al. discloses the first and second communications are the same communication (see col. 8, lines 28-32).

14. Claims 18-22, 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combined system Kou (U.S. Patent No. 5,303,234) in view of Gatherer et al. (U.S. Patent No. 6,396,457 B1).

In the claims 18, 12, 20, Kou discloses the limitations of claim 17 above.

However, Kou is silent to disclosing a Bluetooth master device, and wherein the wireless communication link is a Bluetooth ACL link, and communications and further communications include coded speech information.

Gatherer et al. discloses a Bluetooth master device, and wherein the wireless communication link is a Bluetooth ACL link, and communications and further communications include coded speech information (see col. 1, lines 50-5, col. 2, lines 1-3, col. 8, lines 10-14).

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Kou with the teaching of Gatherer to provide a Bluetooth master device and the wireless communication link is a Bluetooth link in order to uses retransmission of packet for guaranteed reliability.

15. In the claim 19, Gatherer et al. discloses a base unit of a cordless telephone system (see col. 1, lines 50-5, col. 2, lines 1-3, col. 8, lines 10-14).

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16. In the claim 21, Gatherer et al. discloses the wireless communication interface includes a switched antenna diversity section and a plurality of antennas (see figure 2, figure 3) coupled thereto for performing switched antenna diversity communication over the wireless communication link (see col. 1, lines 50-5, col. 2, lines 1-3, col. 8, lines 10-14).

17. In the claim 22, Gatherer et al. discloses the wireless communication interface includes a switched antenna diversity section and a plurality of antennas (see figure 2, figure 3) coupled thereto for performing switched antenna diversity communication over the wireless communication link (see col. 1, lines 50-5, col. 2, lines 1-3, col. 8, lines 10-14).

Allowable Subject Matter

18. Claims 3-7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

19. The following is an examiner's statement of reasons for allowance: the prior art (5602836, 5303234, 5420851, 6026297, 6396457, 5684791) of record does not appear to teach or render obvious the claimed limitations in combination with the specific added limitations, as recited from dependent claim 3: "determining step includes the first device determining that the first device needs to retransmit to one of the further devices during the retransmission period a first packet that was transmitted by the first device to the one further device during the transmission period, and the first device also determining that the first device needs to transmit to a second further device during the

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retransmission period a second packet including an indication that the second further device should retransmit to the further device during the retransmission period a third packet that was transmitted by the second further device to the first device during the transmission period .

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chuong Ho whose telephone number is (703) 306-4529. The examiner can normally be reached on 8:00AM to 4:00PM.

21. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Chuong Ho

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Examiner
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03/21/04

A handwritten signature in black ink, appearing to read 'W. Chin', with a long horizontal line extending to the right.

WELLINGTON CHIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600